DOCUMENT RESUME

ED 168 037 CS 204 741

AUTHOR Crowhurst, Marion
TITLE Syntactic Complexity in Two Modes of Discourse at Grades 6, 10 and 12.
PUB DATE [78]
NOTE 18p.; Study prepared at Brandon University

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Age Differences; Complexity Level; *Composition (Literary); Discourse Analysis; Educational Research; Elementary Secondary Education; Grade 6; Grade 10; Grade 12; *Language Development; Language Usage; *Narration; *Persuasive Discourse; *Sentence Structure; Student Development; *Syntax

ABSTRACT

Compositions in the narrative and argumentative modes of discourse were collected from 240 students (40 boys and 40 girls each from grades 6, 10, and 12) and analyzed for mean T-unit length to determine any differences in syntactic complexity across modes of discourse or grade levels. At each grade level, T-unit length was significantly greater in the argumentative mode than in narration. The differences between argument and narration at each grade level were greater than the difference between grades 6 and 12 for either mode of discourse. Significant increases in argumentative mode T-unit length appeared between grades 6 and 10 and between grades 10 and 12; but a significant increase in the narrative mode T-unit length appeared only between grades 6 and 10. These data provide further evidence that syntactic complexity in written composition is affected by task variables and that, while syntactic complexity increases with age, it levels off earlier in narrative writing than in other kinds of writing. (Author/RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED168037

Syntactic Complexity in Two Modes of Discourse at Grades 6, 10 and 12

Marion Crowhurst

Brandon University

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Marion Crowhurst

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Author's Address: Brandon University, Brandon, Manitoba, Canada R7A 6A9

CS204741

Abstract

Purposes of the study were to determine:

a. the effect of mode of discourse, i.e., narration and argument, on the syntactic complexity of compositions written by sixth-, tenth- and twelfth-graders; and

b. whether there were significant differences between Grades 6 and 10 and between Grades 10 and 12 in the syntactic complexity of compositions written in each mode.

Subjects were 240 students randomly selected from four elementary schools and two high schools in Brandon, Manitoba. At each grade level, T-unit length in argument was significantly greater than in narration. At each grade level, the difference between argument and narration was greater than the difference between Grades 6 and 12 in either mode of discourse. In argument, there were significant increases in T-unit length between Grades 6 and 10 and between Grades 10 and 12; in narration there was a significant increase between Grades 6 and 10 but not between Grades 10 and 12. Implications for research into syntactic development are discussed.

RESUME

On a conçu cette étude dans le but de déterminer: (a) l'effet du mode de discours (v.g., la narration et la discussion) sur la complexité syntaxique des thèmes que écrivent des étudiants en sixième, dixième et douzième années; et (b) si les différences de complexité syntaxique des thèmes écrits dans chacun des modes de discours étaient significatives entre sixième et dixième années, et entre dixième et douzième années.

Pour cette étude, on a selectionné par hasard 240 étudiants parmi les quatre écoles élémentaires et les deux écoles secondaires à Brandon, Manitoba.

A chaque année scolaire, la longueur de l'unité "t" de la discussion étaient plus significative que celle de la narration. A chaque niveau, la différence entre la discussion et la narration était plus grande que la différence entre la sixième et la dixième années par rapport aux deux modes de discours. En ce qui concerne la discussion, l'augmentation de la longueur de l'unité "t" entre sixième et dixième années, et entre dixième et douzième années était significative. Au sujet de la narration, cette accroissement était significative entre sixième et dixième années, mais sans importance entre dixième et douzième années.

On discute les implications de cette enquête scientifique envers les travaux de recherche sur le développement syntaxique.

Syntactic Complexity in Narration and Argument at Three Grade Levels

The study of the development of syntactic control in spoken and written language has long been of interest to educators and developmental psychologists. The study of syntactic development was facilitated by Hunt's (1965) development of the T-unit measure, a more useful, more reliable measure of syntactic complexity than those previously used (Hunt, 1965; O'Donnell, Griffin and Norris, 1967). A T-unit is a principal clause plus all attached subordinate clauses.

Hunt examined the writing of fourth-, eighth- and twelfth-graders and found significant increases in T-unit length from grade to grade. Other investigators in widely scattered regions of the United States and Canada have replicated the finding that mean T-unit length increases with age in written composition (Blount, Johnson and Fredrick, 1968; Braun and Klassen, 1973; Loban, 1976; Stewart and Grobe, in press. Hunt's (1965) results have been used as "norms of syntactic development" (Mellon, 1969; O'Hare, 1973; Stotsky, 1975).

Several recent studies have found that syntactic complexity is affected by various aspects of the writing assignment such as mode of discourse and intended audience (Crowhurst

and Piche, in press; Perron, 1976; Rosen, 1969; San Jose, 1972). Crowhurst et al. had sixth- and tenth-graders write in the modes of argument, description and narration. They found significant differences in syntactic complexity between Grades 6 and 10 in the modes of argument and description but not in narration. They found also that, at Grade 10, there was a greater difference in T-unit length between those who wrote narrations and those who wrote arguments than there was between Grade 6 and Grade 10 in any of the three modes of discourse, i.e., that the difference in writing task produced a greater difference between students in the same grade than was produced by a four-year age difference. They drew two conclusions of significance for the study of the development of syntactic skill. a. While syntactic complexity increases with age, it may be the case that it does not continue to increase in all kinds of writing, e.g., narrative writing. b. Given the differences in syntactic complexity produced by task variables, age norms of syntactic development which take no account of differences in the writing task are inadequate.

The present study was designed to extend and partially replicate Crowhurst et al.'s (in press) study. It examines the effect of two modes of discourse, narration and argument, on the syntactic complexity of compositions written by sixth-, tenth- and twelfth-graders. It seeks to determine whether there

are significant differences, within each mode of discourse, from Grade 6 to Grade 10, from Grade 10 to Grade 12, and/or from Grade 6 to Grade 12. Narration and argument were chosen since, in the earlier study, narration produced the lowest syntactic complexity scores and argument the highest.

Method

Subjects

The final sample consisted of 40 boys and 40 girls in each of Grades 6, 10 and 12 (N=240). Subjects were from two high schools and four elementary schools in Brandon, Manitoba, a city of approximately 40,000. Students from eight sixth-grade classes (N=223), eleven tenth-grade classes (N=228), and ten twelfth-grade classes (N=206) were randomly assigned to one of the two mode conditions so that there was approximately the same number of students writing in each of narration and argument in each classroom. All classes in the selected grades at each school were involved. Students wrote three times in the assigned mode. Of those subjects who completed all assignments, 20 boys and 20 girls were randomly selected at each grade level in each mode. The mean age of Grade 6 subjects was 12.1; of Grade 10, 16.1; of Grade 12, 17.9.

To determine whether the groups of subjects in each of the two modes were equivalent on measured syntactic complexity in writing, the "Aluminum" passage (Hunt, 1970) was administered to all students prior to beginning data collection. At each grade level, mean T-unit lengths in the two modes were approximately equal. At Grade 6, means and standard

deviations for narration and argument respectively were:
$\bar{X}$ = 7.75, SD = 1.83; $\bar{X}$ = 7.44, SD = 1.59; at Grade 10,
$\bar{X}$ = 10.84, SD = 3.23; $\bar{X}$=10.69, SD = 2.64; at Grade 12,
$\bar{X}$ = 11.30, SD = 2.07; $\bar{X}$ = 11.35, SD = 2.03.

Materials and Assignments

Three 35 mm colour slides were used to elicit writing samples, each picture representing one topic. Pictorial stimuli were chosen in order to control topic across mode. Canoe showed two canoes on a lake in the woods. Classroom showed an elementary classroom with a boy about to let fly with a rubber band. Whale showed a performing whale in mid-air. Three picture-topics were chosen on the assumption that three compositions would produce a sample of approximately 400 words per student, the approximate sample size required for reliable calculation of mean T-unit length (O'Hare, 1973).

Printed assignment-instruction sheets were used to minimize both teacher effect and cross contamination of the two mode conditions which were administered in each classroom in each writing session. The instruction for narration assignments was to write an exciting story of about one page about the picture. For the argument assignments, students were asked to write on a specific subject related to the picture. For canoe, for example, the argument assignment, in abbreviated form, was as follows:

> Your teacher is planning a three-day trip for your class. One possibility is the kind of trip suggested by this picture. Decide whether or not you would like this

kind of trip. Your task is to try to convince your teacher to agree with you.

Packages of assignment booklets for each class were prepared in advance. Each booklet consisted of a printed assignment sheet, complete with subject's name, stapled to a legal-sized sheet of paper lined on both sides. There was a package of assignment booklets for each class for each of the three writing sessions.

Procedure

Assignments were administered by the classroom teacher who projected the appropriate slide, distributed the assignment booklets and issued brief, standardized instructions in each writing session. Students wrote once a week for three weeks in their assigned mode, once on each of the three topics. Both mode conditions were administered in each classroom each session. The order of topics was randomly assigned to classes. Each writing session lasted 40 minutes. The week following the final assignment, make-up assignments were given to students who had missed not more than one.

Scoring and Analysis

Each composition was segmented into T-units and the mean number of words per T-unit was calculated for each composition. Procedures for segmenting into T-units were based on those used by O'Hare (1973, pp. 46-49). Scoring was done by the experimenter and three trained assistants. Researchers have consistently reported that trained scorers analyze into T-units with little or no disagreement about T-unit boundaries (O'Donnell et. al.,

1967, p. 34; Crowhurst et al., in press). In the present instance, inter-scorer reliability coefficients calculated after training and prior to scoring, ranged from .97 to .99 ($p < .001$ for $r = .97$).

Scores on the dependent measure, mean number of words per T-unit (W/TU), were analyzed by an ANOVA in a 3(grade) x 2(mode) x 2(sex) design. Results were tested for significance at the .05 level.

Results

Average total word lengths in grade by mode cells ranged from 556 in Grade 6 argument to 725 in Grade 10 narration. The average sample size per student was thus well beyond the 400 words required for reliable calculation of mean T-unit length.

Mode exerted a significant main effect, $F(1,228) = 105.66$, $p < .001$. Bonferroni *t* statistics were used to make planned, pairwise comparisons of means in mode by grade cells. At each grade level, mean T-unit length was greater in argument than in narration. Means for mode by grade cells are presented in Table 1.

Insert Table 1 about here

Grade exerted a significant main effect, $F(2,228) = 17.20$, $p < .001$. Bonferroni *t* statistics were used to make planned pairwise comparisons of means in mode by grade cells. The results showed:

1. In argument, there were significant contrasts between

Grades 6 and 10 and between Grades 10 and 12 ($p < .05$).

2. In narration, there was a significant contrast between Grades 6 and 10 but not between Grades 10 and 12. Means for mode by grade cells are presented in Table 1.

There was no significant sex effect, $F(1,228) = 3.69$, $p < .06$.

Discussion

There was a significant difference between modes of discourse at every grade level. At each grade level, argument was more syntactically complex than narration, a finding in agreement with those of several earlier studies (Crowhurst et al., in press; Perron, 1976; Rosen, 1969; San Jose, 1972). It may be regarded as well established by research that a. differences in syntactic complexity are associated with differences in mode of discourse, and b. narrative writing is generally less syntactically complex than argument. The studies cited were conducted in widely scattered regions in Britain, the United States and Canada, and involved children in a variety of grades from 3 to 12.

There were significant differences in syntactic complexity from grade to grade. In the mode of argument, there were significant differences between Grades 6 and 10 and between Grades 10 and 12; but in the mode of narration, there was a significant difference between Grades 6 and 10 but not between Grades 10 and 12. While this result differs from the finding of Crowhurst et al. (in press) who found no significant difference in narration between Grades 6 and 10, the absence of a significant difference between Grades 10 and 12 lends some

support to Crowhurst et al.'s suggestion that there may be a point, as yet undetermined, beyond which age-related increases in syntactic complexity do not occur in narrative writing. If this hypothesis is supported by the results of further studies, there are important implications for studies of the development of syntactic ckill. Such studies should examine writing in which continued development is most likely to be manifested. Argumentative writing appears to be one such kind of writing. Narrative writing appears to be less suitable for studies of syntactic development both because it tends not to require writers to make maximum use of their syntactic resources, and because it appears that increases in syntactic complexity from grade to grade may level off earlier in narration than in some other kinds of writing.

In view of the evidence that syntactic complexity varies greatly with mode of discourse, Crowhurst et al. question the appropriateness of the use which has been made of Hunt's scores as norms of syntactic development. Hunt's mean scores for each grade were obtained by averaging across a number of writing tasks which are not described. They do not take account of differences in the writing task. Crowhurst et al. found that a greater difference was produced within the same grade (Grade 10) by different writing tasks than was produced by a four-year age difference. The results of the present study reveal the same phenomenon to a more striking degree. At every grade level, the difference in mean T-unit length between narration and argument was greater than the difference between

Grades 6 and 12 in either mode of discourse. At Grade 6 there was a difference of 3.18 words between the writing of students who wrote narrations and the writing of those who wrote arguments. At Grade 10, the difference was 2.69 words and at Grade 12, 3.55 words. The mean difference between Grades 6 and 12 was 2.09 words.

Age norms which take no account of differences in syntactic complexity produced by differences in the writing task are meaningless. It would be more useful if developmental norms were established for each grade level in each of several different kinds of writing--in each of the four traditional modes of discourse, for example, or, alternatively, in each of expressive, transactional and poetic writing (Britton, J. Even then, however, the norms would not reflect the importance of other situational factors which have been found to affect syntactic complexity--audience and topic, for example (Crowhurst et al., in press).

Substantial differences were found in the present study between compositions in the same mode of discourse written by individual students. At all grade levels, in both modes of discourse, it was common to find differences in mean T-unit length of eight, nine and ten words between two compositions by the same student. There were a number of examples of differences of much greater magnitude. There was a difference of 18.45 words on mean T-unit length between canoe and classroom arguments written by a sixth grade boy and a difference of 15.58 words between whale and classroom arguments written by

a twelfth grade boy. Similarly great differences between compositions by the same student were found by Crowhurst (1977). She found that a tenth-grade boy writing in the mode of argument produced mean T-unit lengths for canoe, classroom and whale, respectively, as follows: when writing for a teacher audience, 11.21, 22.22 and 16.07; when writing for a best friend audience, 9.91, 12.92, and 11.71. For compositions in the same mode on the same topic (classroom) for different audiences, there was a difference of 9.30 words on mean T-unit length; for compositions in the same mode, for the same audience (teacher) on different topics (canoe and classroom), there was a difference of 11.01 words. Given such differences in syntactic complexity between compositions by the same student, teachers and researchers should proceed warily when applying norms of syntactic development to individual students, no matter how carefully those norms have been constructed.

In summary, the present study provides further evidence that syntactic complexity in written composition is affected by task variables. At all three grade levels, syntactic complexity was greater in argument than in narration. The difference produced at each grade level by the difference in mode of discourse was greater than the difference produced by a six-year age difference. The study gives some support to the suggestion that, while syntactic complexity increases with age, increases tend to level off earlier in narrative writing than in some other kinds of writing. The results have clear implications for research into syntactic development. Such research

must take account of task-related differences in syntactic complexity. Moreover, researchers would be well to collect writing samples based on assignments which require subjects to make maximum use of their syntactic resources; argumentative writing appears to be one such kind of writing, while narrative writing appears to be less useful in this regard. Finally, even within the same mode of discourse, substantial differences in syntactic complexity were found between compositions by individual students. Teachers should note that conclusions drawn about individual students on the basis of one or two compositions are apt to be false.

REFERENCES

Blount, N. S., Johnson, S. L. and Fredrick, W. C. A comparison of the writing of eighth- and twelfth-grade students (Technical Report No. 78). Madison: University of Wisconsin, Research and Development Center for Cognitive Learning, 1968. (ERIC Document Reproduction Service No. ED 035 652)

Braun, C. and Klassen, B. A transformational analysis of written structures of children representing varying ethno-linguistic communities. Research in the Teaching of English, 1973, 7, 312-323.

Britton, J. Language and Learning. London: Allen Lane The Penguin Press, 1970.

Crowhurst, M. and Piche, G. L. Audience and mode of discourse effects on syntactic complexity in writing at two grade levels. Research in the Teaching of English (in press).

Crowhurst, M. The effect of audience and mode of discourse on the syntactic complexity of the writing of sixth and tenth graders. Dissertation Abstracts International, 1978, 38, 7300A-1A.

Hunt, K. W. Grammatical structures written at three grade levels. Research Report No. 3. Champaign, Ill.: National Council of Teachers of English, 1965.

Hunt, K. W. Syntactic maturity in school children and adults. Monographs of the Society for Research in Child Development, 1970, 35 (serial No. 134).

Loban, W. Language development: kindergarten through grade twelve. Research Report No. 18. Urbana, Ill.: National Council of Teachers of English, 1976.

Mellon, J. C. Transformational sentence-combining. Research Report No. 10. Champaign, Ill.: National Council of Teachers of English, 1969.

O'Donnell, R. C., Griffin, W. J., and Norris, R. C. Syntax of kindergarten and elementary school children: a transformational analysis. Research Report No. 8. Champaign, Ill.: National Council of Teachers of English, 1967.

O'Hare, F. Sentence-combining: improving student writing without formal grammar instruction. Research Report No. 15. Urbana, Ill.: National Council of Teachers of English, 1973.

Perron, J. D. Written syntactic complexity and the modes of discourse. Paper presented at the annual meeting of the American Educational Research Association, New York, April, 1977.

Rosen, H. An investigation of the effects of differentiated writing assignments on the performance in English composition of a selected group of 15/16-year-old pupils. Unpublished doctoral dissertation, University of London, 1969.

San Jose, C. P. M. Grammatical structures in four modes of writing at fourth grade level (Doctoral dissertation, Syracuse University, 1972). Dissertation Abstracts International, 1973, 33, 5411A. (University Microfilms No. 73-9563).

Stewart, M. F. and Grobe, C. H. Syntactic maturity and mechanics of writing: their relationship to teachers' quality ratings. Research in the Teaching of English, (in press).

Stotsky, S. L. Sentence-combining as a curricular activity: its effect on written language development and reading comprehension. Research in the Teaching of English, 1975, 9, 30-71.

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR WORDS/T-UNIT
IN GRADE BY MODE CELLS

MODE		GRADE 6	10	12
Narration	$\bar{X}$	10.60_a	12.48_c	12.51_c
	SD	1.97	2.29	1.78
Argument	$\bar{X}$	13.78_b	15.17_d	16.06_e
	SD	3.10	2.37	2.45

For the nine contrasts of interest, cell means sharing a common subscript are not significantly different.